REMARKS

A. The cited art

Dunworth discloses a software interface through which users may browse through access information such as available goods and services in a particular geographic area using a geographical map. The geographic area is selectable by the users from a hierarchical geographic database, and the information associated with the selected area is retrieved[3].

Willis discloses an information search and retrieval process using geographical coordinates. An index of coordinates is built for a plurality of text based references, resources or sites, each having a set of said coordinates. A user inquiry is accepted containing a text reference. The text reference specified is converted to a set of coordinates, and a search is thereafter conducted against the index of coordinates to retrieve information[4].

B. Rejection of claims 1-9 and 11-24 under 35 U.S.C. §103(a) as being unpatentable over Dunworth

In order to better understand the differences between the cited reference and Applicants' invention, it is pointed out that Dunworth teaches a data retrieval system by which end-users acquire information about resources at a location (*e.g.*, names of shops, items for sale, eating establishments) from a database. Dunworth's system is essentially a "yellow-pages" tool with a geographic query component. The data are stored in a standard database with hierarchical geographic keys (*e.g.*, country/state/county/city)[5]. Geographic access is through the

[3] Dunworth, Abstract

[4] Willis, Abstract

[5] Dunworth, Col. 8, line 49 – Col. 9, line 4

predetermined geographic terms[6] or through a series of image maps which are HTML images pointing to URLs describing the resources[7].

Claim 1, as amended, recites:

1. A computer-implemented method for aggregating and expressing geographically-linked data provided by a plurality of observers, comprising the steps of:

a) providing an interactive map capable of receiving geographical location and associated data over the Internet from a plurality of observers;

b) receiving a first geographical location and first associated data from a first observer;

c) storing said geographical location and said first associated data in a database as data records according to said geographical location;

d) receiving a second location and second associated data from a second observer;

e) repeating steps c) and d) with said second location and second associated data;

f) receiving a spatial query from a user specifying at least one location on said interactive map; and

g) providing the data records associated with the user-specified at least one location.

The Action states that the teachings of Dunworth obviate all the limitations of Claim 1. The Action asserts that Dunworth's method for aggregating and expressing geographically-linked data from a plurality of geographically distributed servers is equivalent to teaching one how to interactively populate a geographically-linked observation database by a plurality of end-users. These are clearly two distinct concepts.

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[6] Dunworth, c3:49-53

[7] Dunworth, col. 8, ll. 49-58

It is respectfully submitted that the Action appears to confuse Dunworth's "distributed servers" with the "plurality of observers" of Claim 1. For example, Dunworth's distributed servers are exemplified by a plurality of routing hubs 100 that may comprise domain name system (DNS) servers executing preprogrammed applications[8]. It is clear from of Applicant's specification that "observers" are end users who enter geographically-referenced observation data[9].

In Dunworth's system, end-users interact with his software interface through his "distributed servers" (*i.e.*, routing hubs 100) to access information[10]. In his preferred embodiment, the web organizer server 114 provides subscribing users with a geographically organized perspective of the information available[11]. This user-accessible information is located in a "local content" database 230 and is retrieved by translating a user's request for topical (or sub-topical) information to a local content search engine 520[12] that searches the local content database[13] and returns the desired information, supplemented by 'yellow pages' information from the YPLD database 328[14]. Figure 16 presents an example of information within a local content database, which is arranged hierarchically in folders [15]. However, Dunworth is completely devoid of teaching or suggestion of how to populate the local content database 230 and YPLDS database 328. This is in sharp contrast to the Applicants' present invention, as recited in Claim 1, as amended, wherein the data records received from the plurality of observers are the observation data being stored and retrieved from the database.

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[8] Dunworth, col. 6, ll. 4-11

[9] Specification, page 7, ll. 10-12

[10] Dunworth, col. 6, ll. 58-61

[11] Dunworth, col. 7, ll. 5-10

[12] Dunworth, col. 14, ll. 28-45

[13] Dunworth, col. 15, ll. 1-3

[14] Dunworth, col. 15, ll. 25-33

[15] Dunworth, col. 23, ll. 13-39

The Action further states (Page 3, 4b) that *receiving a first location and first associated data from a first observer* is equivalent to presenting the end-user with a choice from among several available topical information selections. Applicants disagree. The direction of geographically-associated data flow as recited in Claim 1, as amended, is clearly completely opposite from that described in the section of Dunworth cited for support of this assertion[16]. In the former, location and associated data is flowing *from* the observer to a database populating mechanism, while in the latter options are being presented *to* the end user.

The Action further suggests (Page 3, 4c) that Dunworth teaches a data entry system to interactively create and store records, which is not accurate. As stated above, Dunworth is completely devoid of teaching how to populate the local content database 230 and YPLDS database 328. Nor is there support in Column 13, lines 54-59, as the Action states, for interactively populating Dunworth's other databases. Alternatively and importantly, the presently claimed invention allows any user, over the Internet, to create a geo-referenced location within the observation database with a very high degree of spatial resolution.

Dunworth's system is concerned with retrieval of information (*e.g.*, goods and services) available in a particular geographic area. The Action appears to concede Dunworth's failure to teach the geographic or resource database-populating features of Claim 1 (Office Action, page 4, 4g), but then, without basis, asserts that Dunworth's organizer, which comprises a search engine for searching a database of predetermined geographic areas, and/or Dunworth's image map query function for returning predetermined caricatures or icons associated with the predetermined areas, are sufficient to enable an artisan to interactively populate a database geographically-referenced observation data. Applicants do not understand how the operation of search engines can be asserted as teaching or suggesting interactive database populating.

[16] Dunworth, col. 2, ll. 45-47

It is clear, for at least the reasons provided above, that Claim 1, as amended, is patentable over the cited reference, and request reconsideration and withdrawal of the rejection. Even applying the Willis patent to negate patentability of independent Claim 1, as amended, is inappropriate for the reasons provided below with respect to Claim 10.

With regard to Claims 2-9 and 11-16, each of these claims includes all of the limitations of Claim 1, as amended, and even further define the present invention. They each include the patentable limitations, as described above, not taught by Dunworth, relating to interactive population of a geographically-linked database and querying of said database by end users. Thus, Applicants respectfully submit that Claims 2-9 and 11-16 are similarly patentable over the cited references.

Claim 17, as amended, recites:

17. A computer-implemented method for accumulating geographically-linked data in order to respond to geographical based queries, comprising the steps of:

a) providing an interactive map;

b) receiving a plurality of locations and a plurality of associated data from an observer;

c) translating said plurality of locations to one or more map coordinate points;

d) storing said one or more map coordinate points and said plurality of associated data in a spatially-linked database as data records;

e) receiving at least one geographical based query from at least one user, said at least one user specifying at least one location point on said interactive map; and

f) providing the data records associated with the user-specified at least one location

In rebuttal to the comments of the Action, Claim 17 has been amended to clarify that observers are the source of the locations and associated data for the spatially-linked database. Claim 17, as amended, includes limitations a) through d) that encompass the aspect of

interactively populating a spatially-linked database with geographic and geographically-associated observations that are then subsequently searched by at least one user, which, as discussed above, is not taught or suggested by the cited reference(s). Applicants respectfully submit, therefore, that Claim 17 is patentable over the cited reference(s).

Claim 18, as amended, recites:

18. A computer-implemented method for conducting ornithology studies, comprising the steps of:

a) providing a web-based interactive map capable of receiving as input locations and associated data from a plurality of observers;

b) creating a plurality of bird observation sites in a spatially-linked database in response to input from said plurality of observers;

c) accepting locations and associated data from said plurality of observers;

d) translating said locations to map coordinate points;

e) relating said associated data to bird observation sites among the created bird observation sites using said map coordinate points; and,

f) storing said associated data in a database at respective related bird observation sites.

Claim 18 has been amended to clarify that the bird observation sites being supplemented are those previously interactively created in the spatially-linked database. Claim 18, as amended, includes limitations a) and b) that encompass the aspect of populating a spatially-linked database with geographic and geographically-associated observations from a plurality of observers, through use of an interactive map. These patentable limitations, as previously discussed, are not taught or suggested by the cited reference(s). Additionally, dependent Claims 19 and 20 include these patentable limitations, as these claims depend from Claim 18. Applicants respectfully submit, therefore, that Claims 18-20 are patentable over the cited reference(s).

Claim 21, as amended, recites:

21. A computer-implemented method for collecting data associated with a point of interest, the location of the point being initially undetermined, the collected data being indicative of an event occurring at the point of interest, said method comprising the steps of:

a) providing at least one geographically referenced map for receiving a mark indicative of the relative position of a point of interest, the one map including at least one reference points whose geographic coordinates are known;

b) processing the relative position of the point of interest with respect to the at least one reference point to provide geographic coordinates of the point of interest; and

c) associating the geographic coordinates with data in a geographically-linked database related to the point of interest.

Claim 21 has been amended to clarify the subject matter Applicants' deem to be the invention. As described in Applicants' specification[17] and illustrated in the examples of Figures 6-9, the presently claimed invention employs an interactive map that operates in several possible ways. A position of interest is indicated by either pointing and clicking a mouse at a specific position or, alternatively, a region of interest may be defined by multiple mouse clicks at the positions desired to be vertices of a polygon. Events of interest associated with the identified position or region may then be collected from the database.

Neither Dunworth applied in the rejection, nor Willis utilized in the rejection of Claim 10, teach systems operating in this manner. Claim 21 recites a *point of interest* that is initially "*undetermined*", as opposed to the systems of the cited references, which use predetermined geographic areas presented to a user as selectable items in a textual list or icons [18]. Dunworth's system does have the capability of graphically displaying for a user an image of a geographic

[17] Specification, page 13, ll. 8-22

[18] Dunworth, col. 8, ll. 15-21

area, but the only selections that may be made are from predetermined geographic areas[19]. A user of Dunworth's system must ascend or descend through the predetermined hierarchy of geographic areas. The selection of a *point of interest* in Dunworth's system is, therefor, more limited than the presently claimed invention, wherein the reference point is converted into geographic coordinates relative to the at least one known reference point.

It is therefore clear from at least the reasons provided above that Claim 21, as amended, is patentable over the cited references.

With regard to Claims 22 and 23, each of these claims include similar patentable limitations as discussed with respect to claim 21, relating to the interactive, high spatial resolution, map for identifying points of interest. Additionally, while Claim 21 is directed to retrieval of associated data, Claims 22 and 23 relate to interactively populating the database that is to be searched. As Dunworth or Willis teach neither such an identification method nor such a populating method, Applicants submit Claims 22 and 23 are similarly patentable over the cited references.

Claim 24, as amended, recites:

24. The method of constructing and inputting data into a database, which is connected to a network and is accessible from a plurality of points within a geographic area, the location of the plurality of points of interest being initially undetermined, the data being indicative of an event occurring at one of a plurality of points of interest within the geographic area, said method comprising the steps of:

a) constructing a database to have a plurality of storage locations, each of said storage locations being dedicated to receive data relative to a corresponding point of interest and addressable in accordance with the geographic coordinates of the corresponding point of interest;

[19] Dunworth, col. 8, line 49, through col. 9, line 4

b) providing at least one geographically referenced map for receiving a mark indicative of the relative position of the point of interest, the at least one map including at least one reference point whose geographic coordinates are known;

c) processing the relative position of the point of interest with respect to the at least one reference point to provide geographic coordinates of the point of interest;

d) addressing one of the storage locations according to the geographic coordinates of the point of interest; and

e) inputting data relative to the point of interest into the addressed storage location.

Claim 24, as amended, is a method, not taught by the cited references, of providing a geographically referenced map that accepts marks identifying previously "undetermined" points of interest, deriving geographic coordinates therefrom, and entering end-user data into a database comprised of such points of interest and associated user-entered data. This claim embodies the user populating aspect of the presently claimed invention, which as described above, is neither taught nor suggested by the cited references. As noted above, the cited references employ textual lists of geographic areas, or predetermined maps of such areas, but in no sense do they include a map that *receives a mark indicative of the relative position of a point of interest* that is then converted into geographic coordinates for database populating.

B. Rejection of claim 10 under 35 U.S.C. §103(a) as unpatentable over Dunworth in view of Willis

The Action combines Willis with Dunworth in rejecting Claim 10 as obvious. Willis fails to supply the disclosure missing from Dunworth's teachings, as described above, with regard to using an interactive map for populating a database for subsequent searching. A user of Willis' system is required to enter the geographic coordinates of any points of interest not recognize in its Geographical Index[20]. This is in contrast to the point-and-click interactive map

[20] Willis, col. 5, ll. 10-15

employed by the Applicants' claimed invention, which calculates the geographical coordinates from a known reference.

Further, as also stated above, Dunworth's databases are hierarchically organized, and require a reformatting of spatial queries into a hierarchical query format to access the data. Applicants' "*geographically-linked data records*" are stored in a geo-spatially structured database allowing truly spatial queries of data in the database without having to reformat the spatial queries. Although Wills specifically refers to latitude and longitude indexing, it is merely as a key into a database of similarly predetermined geographic terms. Data storage and querying in Willis' system is not performed on an interactive map. Rather, a user of Willis' system enters a textual query, perhaps modified by a proximity modifier.[21] Willis uses latitude and longitude to satisfy such proximity query modifiers. Thus, like Dunworth, Wills does not obviate the novel data records storage and retrieval method as recited Claim 10.

Dunworth claims a geographic structure, but it is manifested merely in the hierarchical predetermined terms. The Action states that the extension to the inclusion of latitude and longitude for higher precision is a logical extension of Dunworth's method. But, this logical extension could never be accomplished with the Dunworth data model. If one were to attempt substitution of Willis' data structures into Dunworth's system, it would render Dunworth's system inoperable. This is in contrast to the claimed invention, as recited in Claim 10, which relies on the precision of latitude and longitude as a fundamental underlying structure to the observations. This obviates the need for the any predetermined geographic structure as described by Dunworth. The true geographic structure of the presently claimed invention permits entry and retrieval of data based on arbitrary user specifications rather than the predetermined geographic terms used by Dunworth. Willis fails to teach the missing structure.

It is therefor clear for at least these reasons that claims 1-24 are patentable over the cited references, and a notification to this effect is earnestly solicited. A telephone interview with

[21] Willis, col. 6, ll. 35-48

Applicants' attorney, Jacob Erlich (617.854.4000) is requested of the Examiner upon review of this response/amendment, to discuss any outstanding questions.

Respectfully submitted,
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